Surrendering the Initiative?
C2 on the Digitized Battlefield

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The advantage which a commander thinks he can attain through continued personal intervention is largely illusory. By engaging in it he assumes a task that really belongs to others, whose effectiveness he thus destroys. He also multiplies his own tasks to a point where he can no longer fulfill the whole of them.

— Helmuth von Moltke[1]

LEADERS ON the battlefield have always made and will continue to make decisions in the midst of great uncertainty, and they will continue to monitor the execution of those decisions. In a recent Strategic Studies Institute (SSI) publication, Leonard Wong notes that future leaders must demonstrate the competence of adaptability or the capability of being independent and creative as they plan operations based on commander's intent or as they alter plans as conditions change.[2] This concept is not new to tactical operations; the Germans called it "auftragstaktik."

In *The Battle for Hunger Hill,* U.S. Army Colonel Daniel P. Bolger refers to the concept as "situational command."[3] Today, the Army doctrinally addresses this "disciplined initiative within the commander's intent" as "mission command," or "directive" control.[4] However, to reduce uncertainty and disperse the fog of war, the Army is racing to achieve information-dominance through battlefield digitization to allow higher level commanders to monitor the actions of command elements several echelons down the chain of command. Battlefield digitization is ushering in detailed control, fraught with indecision; centralized execution; and stifled battlefield initiative.

Directive v. Detailed Command and Control

Directive control emphasizes mission-type orders and empowers subordinate leaders to exercise initiative during a battle. To exploit opportunities and subordinates' initiative, the commander should explain his mission and intent, then allow subordinates the freedom to figure out how to accomplish the mission.[5] Directive control subsumes the concepts of individual initiative, independent decisionmaking, and allowing thinking leaders to reach tactical decisions on their own.[6] Higher commanders must allow subordinates to develop their own methods and use their own expertise, their intimate knowledge of their soldiers and equipment, and their greater familiarity with their own area of operations. The only constraint is that they must act within the commander's intent to ensure unity of effort.[7]

The alternate form of command and control (C2) is characterized by detailed orders, which emerged as doctrine in the former Soviet Union before and during World War II. However, mission-type orders were never feasible given the political nature of the Soviet military. In fact, the Red Army never favored the use of imaginative, aggressive, young leaders. Instead, it relied on control by detailed orders. Sub-

ordinate leaders had little room to decide their own courses of action and were expected not to innovate, but to carry out their commander's specific orders relentlessly. Today, this practice is generally viewed as ineffective.[8]

Military Philosophers on C2

Detailed control is stigmatized as ineffective because of the battlefield's uncertainty, friction, and fog of war, the last being advanced by military philosophers such as Prussian General Carl von Clausewitz, Swiss General Henri de Jomini, and China's Sun Tzu. Clausewitz said, "Everything in war is very simple, but the simplest thing is difficult [where the difficulties combine and accumulate to produce] inconceivable friction."[9] Clausewitz also said that the "difficulty of accurate recognition constitutes one of the most serious sources of friction in war" because of unexpected events or circumstances or, at least, circumstances that appear to be different than expected.[10] And, "Since all information and assumptions are open to doubt, and with chance at work everywhere, the commander continually finds that things are not as he expected. . . . During an operation decisions have usually to be made at once: there may be no time to review the situation or even to think it through."[11]

Clausewitz's description of friction, fog, and uncertainty in war demonstrates the rationale for military leaders to make quick decisions or determinations in a single instance when they have limited or no information as they execute the battle. Doing so could be pivotal in the mission's success or failure.

Jomini, although somewhat more methodical in his explanation of warfare than Clausewitz, also alludes to the ambiguity and uncertainty leaders face on the battlefield. His explanation of uncertainty comes from many factors: battles beginning at unexpected times; circumstances and occurrences before the battle; ignorance of the enemy's position and plans; friendly forces not yet in place; and inaccurately transmitted or misunderstood orders. All of these situations require the commander to make decisions quickly or suddenly. Jomini says, "Sudden maneuvers seasonably executed during an engagement are more likely to succeed than those determined upon in advance."[12]

Rapid decisionmaking on an uncertain battlefield is essential to "seizing opportunity without hesitation," Sun Tzu's idea of courage. This courage gains the commander victory and the "ability to conquer doubts and create great plans."[13] This idea of courage closely resembles Clausewitz's idea of courage, which was to accept responsibility for his position,

mission, and men in cutting through the friction and fog of war to make quick decisions and take decisive action to achieve military objectives successfully.[14] The fog of war, which is the only certainty in war, makes it imperative for commanders and leaders to be empowered to make timely, appropriate decisions despite having only uncertain information.

Another influential Prussian who understood the necessity of rapid decisionmaking in the fog of war was Field Marshal Helmuth von Moltke. Von Moltke

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is perhaps most responsible for shaping modern German military thought.[15] He developed the concept of maneuvering against the enemy in one continuous sequence, combining mobilization, concentration, movement, and fighting while seizing the initiative from the outset. The intent of this maneuver was to trap one's enemy in a partial or complete envelopment to destroy him in a great, decisive battle of annihilation or encirclement. To control the execution of this maneuver, Von Moltke introduced mission tactics, or auftragstaktik, to allow decentralized initiative within an overall strategic design.[16]

Aware that "no plan of operation survives the first collision with the main enemy body," Von Moltke refrained from issuing any but the most essential orders.[17] He had no desire to paralyze the fighting spirit of the army or to cripple subordinate commanders' spontaneity of action and reaction. Von Moltke readily condoned deviations from his plan of operations if the subordinate commander could gain important tactical successes, for, as he expressed it, "In the case of tactical victory, strategy submits."[18] Realizing that not even the best plan of operations could anticipate the circumstances of war, Von Moltke empowered commanders to make tactical decisions on the spot. In his view, a dogmatic enforcement of the plan of operations was a deadly sin, and he took great care to encourage initiative on the part of all commanders, high and low. Much in contrast to the vaunted Prussian discipline, he placed a premium on his officers' independent judgment.[19]

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Directive Control in the 21st-Century German Army

Although traditional German deference to higher authority and preference for well-defined procedures are the antitheses of directive control, the German Army made it work to a degree unparalleled by any other army in history. While armies are reflections of the societies in which they are drawn, the post-World War I German Army was successful in retaining and reinforcing aspects of German society that contributed most to successful combat operations while dampening or eliminating those features that tended to hinder effective operations.[20]

The German military manual *On the German Art of War: Truppenfuhrung* articulates the doctrine of mission tactics the German Army used during World War II.[21] Parts one and two of the manual were in many ways a modern version of Sun Tzu's *The Art of War*. According to historian Williamson Murray, *Truppenfuhrung* "remains the most influential doctrinal manual ever written [and] represents one of the most thoughtful examinations of the conduct of operations and leadership."[22]

German battlefield experience obtained from the harsh reality of World War I had proven directive control to be effective. While attending the Advanced Class at the Infantry School at Fort Benning, Georgia, from 1930 to 1931, German Captain Adolf von Schell gave a series of informal lectures. According to Von Schell, the German Army used "mission tactics." Orders were not written down in the minutest detail; instead, a commander issued missions to subordinate commanders: "How [missions] shall be carried out is [the commander's] problem. This is done because the commander on the ground is the only one who can correctly judge existing conditions and take the proper action if a change occurs to the situation."[23]

Von Schell, and apparently many others in the post-World War I German Army, believed that com-manders who were given the authority to make their own decisions within the limits of their mission felt personally responsible for the outcome and would therefore be successful and accomplish more. In the early 1930s, Von Schell wrote, "It is certainly evident from training in peace that the more freedom allowed a subordinate leader in his training, the better the result will be. Why? Because he is made responsible for the results and allowed to achieve them in his own way."[24]

The key to success, as alluded to by Von Schell and directed in *Truppenfuhrung,* was for subordinate leaders to exercise initiative through directive control within the limits of the mission and in accordance with the commander's intent. For directive control to work, a subordinate leader, or any soldier given a mission, had to fully understand his commander's intent and, in most cases, the intent of the next higher commander.[25] As long as battlefield decisions were made in accordance with the commander's intent, subordinate commanders had a wide degree of latitude and were expected to exercise great initiative. This doctrine of directive control established the framework of command and control for execution by the German Army that entered World War II. This superior doctrine led to initial German battlefield successes during the first half of the war.

Directive Control in the U.S. Army

U.S. Army General George S. Patton, Jr., was the leading proponent of directive control among U.S. generals during World War II.[26] His trademark phrase was, "Never tell people how to do things. Tell them what to do and they will surprise you with their ingenuity."[27] Patton led from the front and drove the Third Army across Europe with a series of half-page-long operations orders. In the process, he "taught the *auftragstaktik* crowd a thing or two about their trade!"[28]

Despite Patton's reputation as being eccentric and arrogant, he deeply respected his subordinates' creative, intuitive powers. He also recognized that some judgmental error is inherent in decisive combat action, and above all, he disdained inaction and indecisiveness. He acknowledged that the exercise of initiative at all levels offered the best chance for victory.[29]

Mission tactics have existed to a degree within the U.S. military since 1775. By the American Civil War, several trends in warfighting were emerging. Battles had become longer and did not conclude in one day. Commanders could not fully see the entire

LTG George S. Patton, Jr. (center) and MG Manton Eddy inspect a forward observation post and observe 80th Infantry Divisions operations, 10 August 1944.

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battlefield. These conditions led commanders to employ C2 techniques similar to mission command.[30] Through the years, mission command has been the American method. The exception was Vietnam, with its flying command posts. But, even then the man on the scene usually took action and made the call. In the article "Maneuver Warfare Reconsidered," Bolger bluntly states, "Put a lieutenant in the jungle with a radio and he'll ask forgiveness, not permission. Try to micromanage him and he'll find the off-switch."[31]

Despite frequent use, directive control was not formally established as U.S. Army doctrine until after Vietnam. Despite the Army's own brand of mission tactics, German maneuver warfare doctrine of World War II played a central role in the development and publication of U.S. Army AirLand Battle operational doctrine during the 1970s and 1980s.[32] Many classical German ideas and methods of truppenfuhrung found their way into the 1984, 1986, and 1993 versions of Field Manual (FM) 100-5, *Operations,* particularly the concepts of commander's intent, initiative, independently thinking leaders, and mission orders.[33]

Currently, the ideas and language of directive control saturate U.S. Army doctrine. Field Manual 6-0, *Command and Control,* contributes the largest amount to this body of doctrine by explaining mission command and directive control and advancing them as the preferred and most advantageous methods to successfully command and control military operations.[34] Referencing auftragstaktik in a historical sidebar, FM 6-0 defines mission command by the conduct of military operations through decentralized execution based on mission orders. The manual states, "Successful mission command results from subordinate leaders at all echelons exercising disciplined initiative within the commander's intent to accomplish missions."[35] The manual emphasizes timely decisionmaking in accordance with the higher commander's intent and subordinates' clear responsibility to fulfill that intent through initiative.[36]

The doctrine of directive control appears in other foundational sources of Army doctrine, such as the following:

"Initiative requires delegating decisionmaking authority to the lowest practical level. Commanders give subordinates the greatest possible freedom to

act. They encourage aggressive action within the commander's intent by issuing mission-type orders that assign tasks to subordinates without specifying how to accomplish them."[37]

"Commanders encourage subordinates to act within their intent as opportunities occur. Vision, clear

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communication of intent, and the command climate create an atmosphere conducive to the exercise of subordinate initiative."[38]

"Commanders at each echelon must precisely state the mission to their subordinate commanders without telling them how to do it."[39]

"Given the expected battlefield conditions, leaders at every level must avoid placing unnecessary limits on their soldiers' freedom of action. The leader at the point of decision must have the knowledge, training, and freedom necessary to make the correct choice in support of the commander's intent. This concept must be emphasized at every opportunity at every level of leadership."[40]

The Army's most current warfighting doctrine clearly and profoundly advocates use of directive control in battle and in other military operations to establish the best formula for success.

Transformation and Information-Age Warfare

The immediate lessons learned from Operations Just Cause and Desert Storm caused the Army to think about command on the move under conditions of increased battle tempo. Visionary leaders like General Frederick M. Franks expanded this thinking to capture the whole art of command and to introduce the term "battle command" to replace the traditional idea of command and control.[41] Franks wanted to break away from the Cold War associations of staff processes, command post arrangements, and predictable battlefields tied to C2. He wanted to focus on the art of command and battle leadership. Franks understood that the nature of land battle would continue to be tough, brutal, and unpredict-

able. Land battle would require commanders to be at the front with their troops, not tethered to a command post, to see the dispersed, perhaps noncontiguous, battlefield.[42]

As the Commanding General, U.S. Army Training and Doctrine Command (TRADOC), Franks established battle labs to unite industry, government, academia, and the Army to study and experiment in leveraging information technology to help commanders in battlefield visualization and decisionmaking.[43] In a letter to TRADOC commanders in February 1993, Franks wrote, "We are at the beginning of a revolution in the way we will command soldiers and tactical units in battle. The work done at all our [battle labs], in addition to the Battle Command Battle Lab, is vital to this. We do not have answers and that is why we have set ourselves up to experiment. I am convinced we are in a transition in battle command now with info age technology as significant as back in the 1920s when we went from flag sets to wireless radios to combined arms to upbeat tempo."[44] Thus began the pursuit of battlefield digitization and Information-Age warfare.

Most early doctrine defined information warfare as actions taken to achieve information superiority by affecting adversary information, information-based processes, and information systems, while defending one's own. Over the years, interpretations of Information-Age warfare have included mass media and its relationship with military operations; precision weaponry; electronic warfare; and psychological operations. While these are all valid aspects of Information-Age warfare, the most relevant to the scope of this article is C2 warfare.[45]

In line with early definitions of information warfare, C2 warfare "is a dimension of conflict in which opposing armed forces attack each other's information systems and processes while protecting their own."[46] The purpose of this action is to create a condition on the battlefield in which friendly forces can perceive the battlefield, control its forces effectively, and act decisively while denying the enemy the capability of doing likewise.[47] The commander's ability to see the battlefield and know friendly and enemy locations and activities while commanding his own forces is, cumulatively, termed command, control, communications, and intelligence (C3I). C3I capabilities provide commanders and leaders at all levels with the ability to manage battle by allowing them to collect, analyze, disseminate, and act on battlefield information from a variety of sources.[48]

These functions are not new to warfare. At least as early as the time of Alexander the Great, com-

LTG Franks (*with pointer*) explains plan to envelop remaining Iraqi forces during Operation Desert Storm, VII Corps JUMP TAC, 27 February 1991.

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manders needed these capabilities to direct battles. The great commanders of history recognized that victory on the battlefield depended on their ability to collect, analyze, disseminate, and act on battlefield information. English Field Marshal Arthur Wellesley (Lord Wellington) and other successful Napoleonic-era generals led from the front because doing so put them in the best position to collect, analyze, disseminate, and act on the information needed to influence the fight. Limited communications kept those commanders from commanding over great distances, but today's commanders have access to technology that can vastly improve C3I performance.[49]

Improved C3I has led some to question the utility of directive control. In *The Principles of War for the Information Age,* Lieutenant Colonel Robert Leonhard argues that although the improvement in information technology serves as an enabler for command, the Army has yet to see a clear exploitation of information technology. He says, "We are clinging to outdated doctrine that calls for decentralized command and control. It is illogical, pointless, and a waste of money for us to make our higher headquarters smarter in future battle if we

intend to fanatically preach the doctrine of decentralization."[50]

According to Leonhard, directive control was only effective in the past because it synchronized authority with information flow. He says, "When the tempo of information flow gives subordinates a more accurate and timely view of the battlefield, then they should have decisionmaking authority that is commensurate with that information. When, on the other hand, the higher headquarters has the information faster, decisionmaking authority should be centralized."[51] While this argument appears to be logical and sound, it articulates the great flawed assumption of technologically based battle command—that technology will accurately provide a common operational picture to a higher headquarters that absolutely replicates the actual situation of the leader on the ground.

Echoes from the Past

The Army temporarily embraced detailed control during the late 1960s when technology made some commanders feel they could best control a fight on the ground from a helicopter overhead. Although this

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was in direct conflict with official command philosophy of the time, the C2 helicopter and the PRC-25 radio gave the illusion of having perfect knowledge of the ground situation. The official command philosophy was that commanders should lead from the front, and the senior leader on the ground had the best perspective of the battle. Despite this, many commanders were seduced by the idea that they could influence a battle's outcome with direct, not mission-type, orders.[52] However, many others resisted the siren song.

Despite the fact that some battalion commanders used their C2 helicopters as their "personal mounts," Lieutenant General Harold (Hal) G. Moore believed that a commander had to get on the ground with the soldiers to really see and hear what was happening. He said, "You have to soak up firsthand information for your instincts to operate accurately. Besides, it's too easy to be crisp, cool, and detached at 1,500 feet; too easy to demand the impossible of your troops; too easy to make mistakes that are fatal only to those souls far below in the mud, the blood, and the confusion."[53]

Despite the great examples of leadership through directive control that commanders such as Moore portrayed, many chose detailed control as standard operating procedure. The predictable results were erosion of trust between subordinates and leaders, and a weakening of the chain of command. There was also a tragic decline in junior officers' and noncommissioned officers' willingness to initiate action without orders. The long-term effects of this particular conflict between technology and command philosophy were devastating.[54]

Battle Command and Directive Control

The same effects that occurred in Vietnam could recur on the modern Information-Age battlefield if Army leaders do not recognize and react by maintaining directive control within combat operations. Battle command, the exercise of command in operations against a hostile and thinking enemy, places

a premium on leader skills and actions that contribute to effective, timely decisions.

Today's operational environment is saturated with technology. The fluid nature of operations and the volume of information available increases the importance of a leader's ability to visualize and describe the operations to direct actions and reactions on the battlefield.[55] As a result, the Army is modernizing information systems to an unprecedented degree. The intent of these improvements in digitizing the battlefield is to provide all leaders with near-real-time information that will allow them to understand the tactical situation and the commander's intent. However, while subordinate leaders have access to the broader tactical situation, higher echelon commanders have access to layers of tactical detail. Just like some commanders in their C2 helicopters in Vietnam, higher echelon commanders who yield to the temptation to direct tactical actions for their subordinates could reduce the benefits of advanced information systems and the situational understanding they support.[56]

The digitized C2 system the Army is building will support and encourage detailed C2. FM 6-0 states, "Detailed control tries to impose order and certainty on the battlefield by creating a powerful, efficient control apparatus that can process huge amounts of information and reduce almost all unknowns to certainties. This is exactly the C2 system the Army is designing and testing, with its extensive system of multiple interconnected sensors, live video feed, and automatic, multiechelon data-sharing. A commander at almost any level can apparently reach down and control the actions of an individual soldier at any time."[57]

What leaders must continue to realize and understand is that situational understanding has limits. It will always be imperfect, especially with respect to the enemy situation. Situational understanding focuses on the current situation and requires constant verification. Requiring 100 percent verification is unrealistic. Accurate situational understanding depends as much on leader's critical thinking and judgment as it does on computer-processed information. FM 3-0 states, "Simply having a technologically assisted portrayal of the situation cannot substitute for technical and tactical competence."[58]

Colonel Rick Lynch reiterated this statement in "Commanding a Digital Brigade Combat Team," a Center for Army Lesson Learned (CALL) special edition newsletter.[59] In addition to technical and tactical proficiency, Lynch emphasizes that the attributes future leaders will need are the same as those that

Soldiers of LTC Hal Moore's 7th Cavalry battalion maneuver under fire during the third day of fighting at LZ X-Ray, 16 November 1965.

Lieutenant General Harold G. "Hal" Moore believed that a commander had to get on the ground with the soldiers to really see and hear what was happening: "You have to soak up first-hand information for your instincts to operate accurately. Besides, it's too easy to be crisp, cool, and detached at 1,500 feet; too easy to demand the impossible of your troops; too easy to make mistakes that are fatal only to those souls far below in the mud, the blood, and the confusion."

were needed yesterday and are needed today. Leaders must be able to visualize and foresee options and effects in a complex setting. They must be decisive. They must be comfortable with uncertainty and ambiguity, and they must be able to anticipate the second- and third-order effects of their decisions. Lynch also states that in a setting such as an information-age battlefield, where an abundance of information is available, Army leaders must be empowering and decentralized.[60]

Lynch says, "As a commander of a digital brigade combat team (BCT), I had visibility on the location of each and every vehicle in the 1st BCT. For example, I could focus in on the actions of D32—the wingman tank of the 3d Platoon, Delta Company, 3-66 Armor. Then, if I chose to, I could tell D32 where to go and what to do—totally circumventing three layers of the chain of command, but I chose not to do that. I set the filters on my digital equipment to show me company-level icons. . . . However, there are individuals who, given the

opportunity to micromanage their units, will do so. This will have a disastrous effect on subordinate leadership."[61]

Having observed some of this battlefield micromanagement firsthand, it is acceptable for me to state that many commanders will default to detailed control in a system that allows this opportunity to exist. In fact, many advocate that directive control and the Army's current path toward digitization simply cannot coexist. Leonhard believes, and most of us will agree, that "doctrine notwithstanding, future technology in the fields of intelligence and communications will drive the U.S. Army toward detailed control more than ever before."[62] Whether future technologies will be effective and timely is irrelevant because the existence of those systems alone, not their effectiveness, will drive doctrine. If technology allows senior commanders to have important information on a timely basis with a considerable degree of resolution and accuracy, then senior commanders will control the battle. Leonhard

> *If technology allows senior commanders to have important information on a timely basis with a considerable degree of resolution and accuracy, then senior commanders will control the battle. Leonhard said, "It is human nature for any commander to act on information. . . . If the commander has the information, he will pass it to lower echelons as needed, but with that information will come orders."*

said, "It is human nature for any commander to act on information. . . . If the commander has the information, he will pass it to lower echelons as needed, but with that information will come orders."[63] Unfortunately, the past has proven this to be true except in the rare cases and examples of commanders who led from the front and empowered their subordinates to make decisions on the battlefield by exercising directive control.

New Technology, Old Challenges

Just as the Army experienced the devastating effects of the conflict between technology and command philosophy in Vietnam, digitization of the battlefield and reliance on information systems in Information-Age warfare poses many of the same challenges. Despite the era or the technology, the ultimate measure of C2 effectiveness remains unchanged—to act faster and more effectively than the enemy can to accomplish the mission at the least cost to the friendly force before the enemy can effectively act and react.[64] The Army must sustain the vital aspects of directive control and encourage, practice, and foster initiative at all levels to act in accordance with commander's intent.

Having served as a major advocate for battlefield digitization, Franks warned, "We must be bold to change when change gets us increased combat power and bold to reject bad ideas. We must keep our eyes focused on combat power results . . . not captivated or dazzled by technology."[65] Battlefield digitization has much to offer Information-Age leaders and commanders on the battlefield if used appropriately to maintain situational awareness and to facilitate information flow and management within levels of command. However, if leaders do not fight within the framework of directive control as stated in current doctrine or are not vigilant in empowering the leader on the ground to exercise mission command, the Army will once again go down the path to a climate of detailed control that could result in indecision, centralized execution, and loss of initiative on the battlefield. This, ultimately, could lead to failure in any conflict, despite technological superiority. *MR*

NOTES

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